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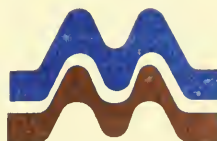
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A SURVEY OF HARDIN, DECKER, AND
SHERIDAN AREA RESIDENTS

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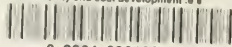
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YOUR COMMUNITY AND COAL DEVELOPMENT:
A SURVEY OF HARDIN, DECKER, AND
SHERIDAN AREA RESIDENTS

by
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Prepared for:

The Decker Area Mines Comprehensive Social Sciences Study
Montana Department of State Lands
U.S. Office of Surface Mining

Prepared by:

Mountain West Research-North, Inc.

May 1983
(Survey conducted November-December, 1982)

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1. INTRODUCTION

The area resident survey was conducted to support the Decker Area Mines Comprehensive Social Sciences Study, sponsored jointly by the Montana Department of State Lands (DSL) and the U.S. Office of Surface Mining and Reclamation (OSM). The purpose of the survey was to provide up-to-date and statistically reliable data on area residents' attitudes toward past and future coal development, social interaction patterns, coal mine employment, and perceptions about the community changes caused by coal development activities.¹

The survey was conducted in the late fall of 1982. A mail questionnaire (included in Chapter 6) that had been developed to include items adapted from previous resident surveys in the Decker Area (Jobes 1972; Jobes and Branch 1983) was administered to a sample of residents in the communities of Hardin, Decker, Dayton, Ranchester, Story and Sheridan in Big Horn County, Montana and Sheridan County, Wyoming (see Figure 1). Of an original sample of 614 households contacted, 439 completed questionnaires were received, providing a response rate of 71.5 percent.

The items in the questionnaire covered four general topics, which serve as the organizing framework for this report. First (though not first in question sequence), demographic and employment information about the respondents and their household members was requested. These characteristics are discussed in Chapter 2. Second, questions concerning respondents' feelings about various aspects of coal development and their community were asked. Responses to these questions are analyzed in Chapter 3. Third, respondents were asked to evaluate the extent to which community facilities and services had changed during the past five years. These data are presented in Chapter 4. Fourth, respondents were asked about their own and, if married, their spouses' friends and about their participation in community and recreational activities. Responses to these questions are discussed in Chapter 5. Chapter 6 summarizes the research methodology.

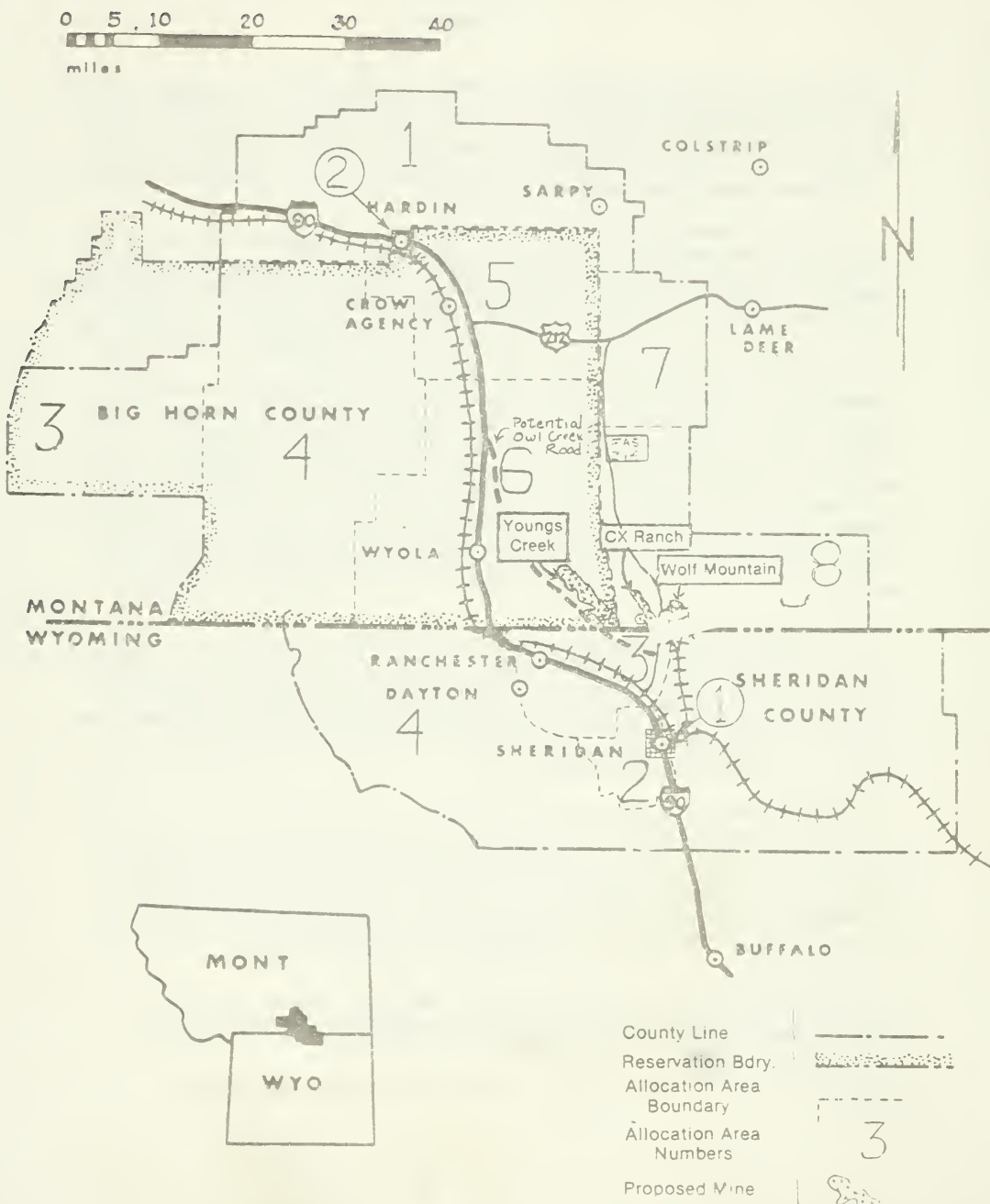
The data and analyses presented in the report focus primarily on frequency data. Although numerous crosstabulations were analyzed, most did not reveal any additional, surprising, or unusual information whose inclusion would have improved the report. In addition, the relatively small cell size that resulted from many of the crosstabulations -- especially in the Hardin area -- reduced their statistical validity and usefulness.² Throughout the report, data are presented in a manner that allows comparison between the residents of the Sheridan area (including Decker) and the residents of the Hardin area.

Although residents of the Decker area were included in the sampling frame, the small population of the area caused only two households from this community to be selected. Since Decker was of particular interest because of its agricultural base and proximity to the existing and proposed mines, an additional sample of Decker residents was drawn to increase representation from this analytically important community. The results of this effort are detailed in a separate document (Jobes and Branch 1983). Responses from the two Decker households drawn in the overall sample are included among the 352 respondents in the Sheridan area.

¹A description of current and proposed coal mining activities in the area and of the existing social and economic conditions in the study area communities are provided in the accompanying report (Mountain West Research-North, Inc., 1983)

²A complete set of all data has been sent to Montana Department of State Lands as Attachment 1.

FIGURE 1
Study Area Map



2. RESIDENTIAL, DEMOGRAPHIC, AND EMPLOYMENT CHARACTERISTICS

This chapter presents a summary of the residential, demographic, and employment characteristics of the respondents. Where equivalent data are available on the total population of the area, they are presented for comparison. It should be noted that for the remainder of this report, the two respondents from Decker have been included as part of the Sheridan area.

TABLE 1

Residential Distribution of Respondents

Area	Number	Percent
Sheridan Area		
Sheridan	330	75.2
Dayton	16	3.6
Ranchester	5	1.1
Story	7	1.6
Decker	2	0.5
Other	2	0.5
Hardin Area	76	17.3
TOTAL	439	100.0

Discussion:

As seen in Table 1, the Sheridan area included respondents from Sheridan and the surrounding communities. Given the relative size of the towns in this area, Sheridan residents dominate the sample (330 out of a total 362). Throughout this report, the Sheridan area sample and the Hardin area sample are addressed separately. Differences in community characteristics and degree of coal development were the primary reasons for this separation. The smaller Sheridan area communities are not discussed separately because of the small sample size. An accompanying report (Jobes and Branch 1983) present data from an additional sample of Decker area residents.

TABLE 2

Age of Respondents and Spouses with County Comparisons
(percent)

Age Group	Sheridan Area Sample ^a (1982)	Sheridan County ^b (1980)	Hardin Sample ^a (1982)	Big Horn County ^b (1980)
17 to 25	7.1	20.7	9.8	24.9
26 to 50	49.1	44.7	54.5	46.5
51 to 65	27.9	19.2	20.5	17.2
Over 65	16.0	15.4	15.2	11.4
TOTAL	100.0	100.0	100.0	100.0
NUMBER	595	18,123	132	7,314

Source: Mountain West Research-North, Inc., 1983 based on survey results and U.S. Bureau of the Census 1980 population data.

^aIncludes both respondents and their spouses.

^bCalculated for county residents 17 years of age or older.

Discussion:

The age distribution of the respondents and, if applicable, their spouses is shown in Table 2. As seen from this table, both the sample and the census show the relatively high proportion of elderly in the study area. Although the sample has a much lower proportion of the population in the 17-to-25 age group than does the census, this is attributable to the high proportion of 17-to-19 year olds in the study area who are not heads of household. If only the 26-and-over population is considered, the sample and census are much closer, with 52.8 percent of the Sheridan area sample in the 26-to-50 age category compared to 56.4 percent in the 1980 Sheridan County census. This comparison (only the over-25 age group) indicates a slight over-representation in the Sheridan area sample of those ages 51 to 65 and a slight under-representation of those over 65 years of age (30.0 percent versus 24.3 percent and 17.2 percent versus 19.4 percent, respectively).

TABLE 3

Sex of Respondents with County Comparisons
(percent)

Sex	Sheridan Area Sample (1982)	Sheridan County (1980)	Hardin Sample (1982)	Big Horn County (1980)
Male	60.8	50.0	60.0	49.0
Female	39.2	50.0	40.0	51.0
TOTAL	100.0	100.0	100.0	100.0
NUMBER	352	18,123	75	7,314

Source: Mountain West Research-North, Inc., 1983 based on survey data and data from the 1980 U.S. Census of the Population for population age 17 and over.

Discussion:

As can be seen in Table 3, approximately 60 percent of respondents in both the Sheridan and Decker areas were male. As discussed in Chapter 6, households were randomly assigned questionnaires instructing either a male or female to complete the questionnaire. Somewhat contrary to expectations, these data indicate that men were more likely than women to assume responsibility for questionnaire completion regardless of the designation made in the instructions.

TABLE 4
Marital Status of Respondents
(percent)

Marital Status	Sheridan Area Sample ^a (1982)	Sheridan County ^b (1980)	Hardin Sample ^a (1982)	Big Horn County ^b (1980)
Married or Equivalent	69.9	62.7	78.7	59.5
Single	8.2	21.0	5.3	26.7
Divorced/Separated	10.2	8.8	4.0	7.5
Widowed	11.6	7.6	12.0	6.3
TOTAL	100.0	100.0	100.0	100.0
NUMBER	352	19,082	75	7,802

Source: Mountain West Research-North, Inc., 1983 based on survey data and data from the 1980 Census of the Population.

^aHousehold heads (male and female, see Table 3).

^bPopulation age 15 and over.

Discussion:

As seen in Table 4, a substantial majority of respondents to the survey were married, although the percentage was appreciably higher among respondents in the Sheridan area than among those in the Hardin area. Because the survey sampled household heads, who were less likely to be in the 15-to-25 age category, a higher percentage of the survey respondents than of the census population were divorced, separated, or widowed and a lower percentage were married. The marital characteristics of the respondents (69.9 percent married, 30.1 percent unmarried in the Sheridan area sample and 78.7 percent married, 21.3 unmarried in the Hardin area sample) affect responses throughout the survey, and should be kept in mind.

TABLE 5
Educational Attainment of Respondents and Spouses
with County Comparisons
(percent)

Education Level	Sheridan Area Sample ^a (1982)	Sheridan County ^c (1980)	Hardin Sample ^a (1982)	Big Horn County ^{b,c} (1980)
Less than high school graduate	12.4	39.6	20.8	55.6
High school graduate	30.4	32.8	26.9	25.4
Some college or vocational school ^d	31.8	16.4	30.8	9.5
College graduate or higher ^e	25.4	11.2	21.5	9.5
TOTAL	100.0	100.0	100.0	100.0
NUMBER	599	10,861	130	4,800

Source: Mountain West Research-North, Inc., 1983 and U.S. Department of Commerce, Bureau of the Census, 1980 Census of the Population: Characteristics of the Population, Montana and Wyoming, tables 51, 88, 120.

^aIncludes both respondents, and where applicable, their spouses.

^bIncludes the Crow and Northern Cheyenne Indian reservations.

^cCensus data are for the population 25 years of age and over.

^dCensus category is 1-to-3 years of college.

^eCensus category is 4 or more years of college.

Discussion:

Table 5 shows the educational characteristics of the respondents and, if applicable, their spouses along with comparable data from the 1980 census. As seen in these comparisons, the sample population has achieved a higher level of education than expected from the census data. In the Sheridan area sample, 57.2 percent of the respondents and their spouses had some post-high school education. In the Hardin area sample, the proportion was somewhat lower (52.3 percent), but both areas were well above county 1980 levels for the population 25 years of age and over (27.6 percent for Sheridan County and 19.0 percent for Big Horn County where the Native American population affects county totals). To some extent, these data reflect the urban nature of the sample, but nevertheless indicate that the sample population has a higher degree of formal education than the population in the study area as a whole.

TABLE 6
Employment Status of Respondents
(percent)

Employment Status	Sheridan Area Respondent	Sample Spouse	Hardin Area Respondent	Sample Spouse
Employed outside the home, or as a proprietor, farmer, or rancher	62.9	59.1	65.3	69.5
Not currently employed (excluding retirees)	12.6	26.3	7.9	16.9
Retired	24.6	14.6	26.7	13.6
TOTAL	100.0	100.0	100.0	100.0
NUMBER	350	247	75	59

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 6 presents the employment status of respondents and their spouses for the Sheridan and Hardin area samples. The high proportion of retirees in the Hardin area sample was somewhat unexpected.

Analysis of the employment characteristics of household heads according to the sex of the respondent revealed some substantial differences depending upon whether the respondent was male or female. The households in the Sheridan sample in which a male served as a respondent had lower employment rates of both men and women (their spouses) than the households in which a female served as a respondent: 70.1 percent of the male respondents and 46.6 percent of their spouses (female) were employed; 51.5 percent of the female respondents and 89.0 percent of their spouses (male) were employed. A similar difference, though different pattern, was seen in the Hardin area: 75.6 percent of the male respondents and 61.0 percent of their spouses (female) were employed; 50.0 percent of the female respondents and 88.9 percent of their spouses (male) were employed. Because much of the data in the remainder of the report is discussed in terms of the respondent, it is important to keep these characteristics in mind.

TABLE 7

Main Occupation of Respondents and Spouses
(percent)

Main Occupation	Sheridan Area		Hardin Area	
	Respon- dents	Respondents and Spouses	Respon- dents	Respondents and Spouses
Salaried Professionals	17.3	17.9	14.3	13.6
Unemployed (inc. homemakers)	7.6	13.8	10.0	15.2
Clerical	7.3	9.8	8.6	12.0
Service	9.1	8.7	11.4	10.4
Craftsmen, other than construction	9.4	7.3	8.6	5.6
Operatives, other than manufacturing	7.9	5.5	7.1	4.8
Farmers/Ranchers	6.1	5.1	8.6	8.0
Technicians	5.8	5.1	5.7	4.8
Managers	6.4	5.0	7.1	4.0
Retail sales	4.2	4.1	4.3	3.2
Transportation equipment operators	3.6	2.8	0.0	4.0
Craftsmen, construction	3.3	2.8	1.4	1.6
Sales, other than retail	2.4	2.5	1.4	2.4
Proprietors	2.1	2.5	7.1	6.4
Self-employed professionals	2.4	2.1	0.0	0.0
Laborers, other than farm	1.5	2.1	1.4	8.8
Foremen	2.1	1.6	0.0	0.0
Farm laborers	0.6	0.5	1.4	0.8
Students	0.6	0.5	0.0	0.0
Operatives, manufacturing	0.3	0.2	1.4	0.8
TOTAL	100.0	100.0	100.0	100.0
NUMBER	330	564	70	125

Source: Mountain West Research-North, Inc., 1983.

Discussion:

The distribution of occupations, as reported by respondents, is given in Table 7. Data are shown for the respondents themselves and also for the respondents and their spouses combined. Respondents were asked to indicate their main occupation and the main occupation of their spouse. Those retired were asked to indicate their main occupation before retirement. In the Sheridan area, 17.9 percent of the respondents/spouses gave their occupation as a salaried professional; 13.6 percent of those in the Hardin area gave this occupation. Clerical and service occupation were the next most frequent occupations (9.8 and 8.7 percent in the Sheridan area and 12.0 and 10.4 percent in the Hardin area, respectively). Slightly more than 5 percent (6.1 percent of respondents and 5.1 percent of combined respondents and spouses) in the Sheridan area and 8 percent (8.6 percent of respondents and 8.0 percent of combined respondents and spouses) in the Hardin area were engaged in farming/ranching as a main occupation.

TABLE 8
Second Job Holding (Respondents Only)
(percent)

Second Job	Sheridan Area Sample	Hardin Area Sample
Yes	20.5	14.5
No	79.5	85.5
TOTAL	100.0	100.0
NUMBER	293	62

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Especially in an agricultural area such as that covered by the survey, it is interesting to know the frequency with which respondents hold second jobs. Table 8 shows that although most respondents were not "usually employed in any other work or as a farmer or rancher" besides their main occupation, slightly over 20 percent of the respondents in the Sheridan sample held a second job. The percentage was low among the Hardin respondents (14.5 percent), despite their somewhat higher representation of persons in the prime working ages (see Table 2). Many of those who identified a second job indicated that it was in the same occupational category as their main job. It is not entirely clear whether this means that the data represent a valid finding or whether it indicates a misunderstanding of the question that has resulted in an over-estimation of second job holding.

TABLE 9
Total Household Income
(percent)

Household Income ^a	Sheridan Area Sample	Hardin Area Sample
Less than \$10,000	15.5	22.4
\$10,001 to \$20,000	24.8	29.9
\$20,001 to \$30,000	25.7	22.4
\$30,001 to \$40,000	18.8	15.4
\$40,001 to \$50,000	7.5	4.5
\$50,001 to \$60,000	2.4	1.5
Over \$60,000	5.4	3.0
TOTAL	100.0	100.0
NUMBER	335	67

Source: Mountain West Research-North, Inc., 1983.

^aTotal household income before taxes.

Discussion:

The income distributions for the Sheridan and Hardin area samples are shown in Table 9. The modal category for Sheridan households was \$20,001 to \$30,000, one category above that for the Hardin sample (\$10,001 to \$20,000). In the Sheridan area, fewer of the respondents (15.5 percent) than in the Hardin area (22.4 percent) indicated that their total household income was less than \$10,000. These relationships conform with census data which give 1980 per capita income levels in Sheridan County at \$7,785 and in Big Horn County at \$4,857.

The Sheridan area sample was also well represented by high income households (15.3 percent over \$40,000). In the Hardin sample, fewer households (9.0 percent) had incomes this high.

TABLE 10

Home Ownership
(percent)

Home Ownership	Sheridan Area Sample (1982)	Sheridan County (1980)	Hardin Sample (1982)	Big Horn County (1980)
Own	78.8	68.5	75.7	64.6
Rent	21.2	31.5	24.3	35.5
TOTAL	100.0	100.0	100.0	100.0
NUMBER	353	NA	70	NA

Sources: Mountain West Research-North, Inc., 1983; U.S. Department of Commerce, Bureau of the Census: Summary Characteristics for Governmental Units and Standard Statistical Areas.

Discussion:

Compared to county census data, the sample population in both the Sheridan and Hardin areas was more heavily weighted toward home owners than toward renters, despite the survey's concentration on the more urban areas of the two counties (see Table 10). Over 75 percent of the respondents in both the Sheridan (78.8 percent) and Hardin (75.7 percent) areas were home owners. This corresponds with the relatively high percentage of respondents who were married (Table 4) and the income distribution discussed in Table 9.

TABLE 11
Household Composition
(percent)

Household Composition	Sheridan Area	Hardin Area
Couple	32.3	32.4
Parent(s) with children	38.3	45.1
Family plus other relative(s)	4.3	1.4
Family or couple plus unrelated adults	1.1	0.0
Single person or unrelated adults	17.4	18.3
Related adult singles	4.3	1.4
Other	2.0	1.4
TOTAL	100.0	100.0
NUMBER	350	71

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 11 shows the composition of the respondents' households. As seen in this table, 76.0 percent of the respondents in the Sheridan area and 78.9 percent of the respondents in the Hardin area were living in a "family" setting. After parent(s) with children and couples, the largest category was "single person or unrelated adults" (17.4 percent in the Sheridan area and 18.3 percent in the Hardin area). Respondents in the Sheridan area were somewhat more likely to share housing with other relatives (8.6 percent) than were respondents in the Hardin area (2.8 percent).

TABLE 12
Age Structure of Respondent Households
(percent)

Age Group	Number of Household Members				Total	Number Responding
	0	1	2	3		
<u>Sheridan Area</u>						
0 to 5	81.0	11.8	6.9	0.3	100.0	347
6 to 10	83.5	14.2	2.0	0.3	100.0	346
11 to 14	88.4	9.2	2.3	0.0	100.0	346
15 to 18	86.7	9.5	2.9	0.6	100.0	346
19 to 25	82.1	12.4	5.5	0.0	100.0	346
26 to 50	48.3	15.6	35.3	0.9	100.0	346
51 to 65	69.9	15.6	14.5	0.0	100.0	346
Over 65	75.5	15.3	9.2	0.0	100.0	347
<u>Sheridan Area</u>						
0 to 5	75.7	13.5	9.5	1.4	100.0	74
6 to 10	79.7	14.9	4.1	1.4	100.0	74
11 to 14	89.2	8.1	1.4	1.4	100.0	74
15 to 18	91.9	0.1	0.0	0.0	100.0	74
19 to 25	78.4	14.9	6.8	0.0	100.0	74
26 to 50	45.9	14.9	39.2	0.0	100.0	74
51 to 65	75.3	13.7	11.0	0.0	100.0	73
Over 65	77.0	16.2	6.8	0.0	100.0	74

Source: Mountain West Research-North, Inc., 1983.

Discussion:

The age structure of respondents' households is shown in Table 12. As seen from this table, 19.0 percent of the households in the Sheridan area and 24.4 percent of the households in the Hardin area included one or more children age five or below. Almost one quarter (24.5 percent and 23.0 percent of the Sheridan and Hardin area households, respectively) included someone over age 65.

TABLE 13
Length of Residence in Community
(percent)

Number of Years	Sheridan Area	Hardin Area
Less than 2	2.5	2.8
2 - 5	17.2	19.4
6 - 10	14.1	12.5
11 - 20	13.0	9.7
Over 20	53.1	55.6
TOTAL	100.0	100.0
NUMBER	354	72

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 13 shows the length of time respondents had been residents of their community. Most of the respondents were relatively long-time residents: 66.1 percent of the respondents in the Sheridan area and 65.3 percent of those in the Hardin area had lived in their community for over 10 years. In the Sheridan area, 19.7 percent had been residents for five or fewer years. In the Hardin area, 22.2 percent were residents of five years or less. Only 2.5 percent of respondents in the Sheridan area and 2.8 percent of respondents in the Hardin area were newcomers with less than two years of residence in their community. These data indicate that respondents' opinions about their community can reasonably be expected to reflect a considerable degree of knowledge and experience.

TABLE 14

Place of Permanent Residence
(percent)

Place Considered Permanent Residence	Sheridan Area	Hardin Area
Here	94.4	88.9
Elsewhere	5.6	11.1
TOTAL	100.0	100.0
NUMBER	355	72

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 14 shows the responses to the question: "Do you consider this [community] to be your permanent residence?" A very high proportion of respondents in both the Sheridan and Hardin areas (94.4 percent and 88.9 percent) considered their current residence to be their permanent residence. This indicates a relatively low sense of transiency in either sample, although a higher proportion of Hardin area respondents (11.1 percent) did not consider the current residence permanent. Too few respondents considered other areas to be their permanent residence to allow identification of any geographic patterns in their responses.

3. ATTITUDES TOWARD COAL DEVELOPMENT AND COMMUNITY

Coal development has been an issue of some controversy throughout the region. In order to discover the nature of opinions about coal development, a major portion of the questionnaire was devoted to questions about past and future coal development and its perceived effects upon the community. Most of the data analyzed in this section represent respondents' opinions. As can be seen in the questionnaire (Questions 1 through 24), these opinions were elicited primarily in response to a series of statements about coal development and the community. Respondents were asked to indicate whether they agreed or disagreed with the statement. Responses were made on a seven-point Likert-type scale (1=strongly agree, 4=neutral, 7=strongly disagree). For purposes of this report, category 2 has been given the label "agree," category 3 "somewhat agree," category 5 "somewhat disagree," and category 6 "disagree."

TABLE 15

Evaluation of Past and Future Coal Development
Sheridan and Hardin Area

Question	Strongly Agree	2	3	Neutral (percent)	5	6	Strongly Disagree	Mean Score ^a	Percent Agree	Number Responding
1. I think additional coal mines should be developed in this area.										
Sheridan Area	30.0	13.3	13.8	15.9	5.2	7.2	14.7	3.3	57.1	347
Hardin Area	39.2	10.8	10.8	28.4	1.4	2.7	6.8	2.8	60.8	74
2. I do not want to see any reduction in mining employment in this area.										
Sheridan Area	57.2	15.5	8.9	9.8	2.6	2.0	4.0	2.1	81.6	348
Hardin Area	61.6	9.6	8.2	12.3	1.4	1.4	5.5	2.1	79.4	73
3. Expansion of coal development within this area would directly benefit the area's residents.										
Sheridan Area	43.1	17.0	11.2	6.3	5.2	8.6	8.6	2.7	71.3	348
Hardin Area	44.6	24.3	10.8	10.8	2.7	0.0	6.8	2.3	79.7	74
4. If there are going to be additional coal mines in this area, the local government should control them rather than the state or federal government.										
Sheridan Area	20.5	12.1	9.5	21.4	5.8	9.5	21.1	3.9	42.1	346
Hardin Area	30.1	6.8	4.1	26.0	9.6	8.2	15.1	3.6	41.0	73
5. With proper planning, I do not think an increase in population will negatively affect this area.										
Sheridan Area	29.9	17.1	12.8	6.8	7.4	8.8	17.1	3.4	59.8	351
Hardin Area	48.6	18.9	10.8	9.5	8.1	0.0	4.1	2.3	78.3	74
6. The coal companies are doing their share to help solve the impact of coal mining on the community.										
Sheridan Area	16.4	15.0	16.7	17.3	11.2	11.2	12.1	3.7	48.1	347
Hardin Area	24.3	10.8	25.7	24.3	4.1	6.8	4.1	3.1	60.8	74
7. On the whole, I think coal development has been a benefit to the local area.										
Sheridan Area	38.7	24.9	16.0	6.0	3.4	4.6	6.3	2.3	79.6	349
Hardin Area	48.6	18.9	14.9	10.8	2.7	1.4	2.7	2.1	82.4	74

Source: Mountain West Research-North, Inc., 1983.

^aA mean score of 4.0 is neutral. Scores below 4.0 indicate agreement. Scores above 4.0 indicate disagreement.

Discussion:

Sheridan Area. For respondents in the Sheridan area, responses to questions 1 through 3 and 7 in Table 15 show a fairly substantial degree of support for existing mining as well as for development of future mines. Interpretation of these data, however, must take into account the timing of the survey, which occurred during a nationally depressed coal market that had resulted in contract cancellations work force reductions at the region's mines, and considerable local concern about the area's economy.

The response to question 4 indicates that respondents did not feel that local government control of mining was entirely desirable. Only 42.1 percent of the respondents agreed with the statement about local rather than state or federal control of mining. Although a substantial proportion (21.4 percent) of the Sheridan area respondents gave "neutral" response to this question, a large and almost equal proportion responded strongly agree (20.5 percent) and strongly disagree (21.1 percent), making this one of the questions upon which respondents exhibited the widest polarization of opinion.

Although a large majority of respondents felt that, on the whole, coal development had been a benefit to the local area (79.6 percent indicating agreement, 6.0 percent neutral), a smaller majority (59.8 percent agreement, 6.8 percent neutral) were confident that an increase in population would not adversely affect the area, even with proper planning (question 5). A similarly small majority (57.1 percent) felt that additional coal mines should be developed in the area (15.9 percent neutral).

As shown in the responses to question 6, coal companies did not receive high marks for assisting the community with impacts; 48.1 percent of the respondents agreed to some extent with the statement while 17.3 percent were neutral. For comparison, a 1979 survey in Campbell County, Wyoming showed 67.5 percent of the residents agreeing to some extent with a similar statement (Racine and O'Haski 1968:13). Although the survey provides little insight into the reasons for this evaluation, the location of the Decker area mines in Montana and the lack of tax revenues from the mining companies to the Sheridan area may well be contributing factors. In addition, since local government officials in Sheridan have made few demands upon coal companies in the past, there has been little call for large-scale corporate mitigation efforts.

Hardin Area.¹ As can be seen from Table 15, residents of the Hardin area were generally somewhat more favorable toward additional coal development and population growth than were the residents of the Sheridan area. They were also somewhat more positive about the effects of coal development on the local area -- 82.4 percent agreed to some degree with the statement that coal development had been a benefit to the local area. A higher percentage of Hardin area than of Sheridan respondents were neutral or in favor of the development of additional coal mines in the area (89.2 percent compared to 73.0 percent). In addition, Hardin area residents were more inclined than Sheridan area residents to agree that coal companies were doing their share to help solve the impact of coal mining on the community (78.3 percent agreement versus 48.1 percent agreement). In the Hardin area, respondents were more likely to be neutral in their views on this topic (24.3 percent compared to 17.3 percent) and less likely to strongly disagree (4.1 percent versus 12.1 percent).

¹Given the relatively small sample size, caution must be taken in evaluating results, especially when there are a relatively large number of response categories.

TABLE 16

Inter-item Correlations for Attitude Questions on Coal Development
Sheridan County

	ATT 1	ATT 2	ATT 3	ATT 4	ATT 5	ATT 6	ATT 7
ATT 1	1.00						
ATT 2	0.48 ^a	1.00					
ATT 3	0.77 ^a	0.52 ^a	1.00				
ATT 4	0.06	-0.12	0.04	1.00			
ATT 5	0.65 ^a	0.45 ^a	0.53	0.06	1.00		
ATT 6	0.48 ^a	0.25 ^a	0.44 ^a	0.09 ^a	0.43 ^a	1.00	
ATT 7	0.69 ^a	0.60 ^a	0.70 ^a	0.04	0.57 ^a	0.50	1.00

Source: Mountain West Research-North, Inc., 1983.

^aSignificant at 0.05 level or beyond.

Discussion:

Tables 16 and 17 display the inter-item correlations for the seven questions shown in Table 15 for the Sheridan and Hardin area samples, respectively. Two important observations can be made about these correlations. First, most of the correlation coefficients are fairly similar in size and direction, and second, although 71 percent of the correlations to the Sheridan area are significant at or beyond the 0.05 level, few are large enough to indicate a high correlation between items. The correlations between ATT 1 and ATT 3 and between ATT 3 and ATT 7 are relatively high. However, given the closeness of the questions, the correlations are not quite as high as one might expect. It is interesting that ATT 4 is not correlated well with any other question.

TABLE 17

Inter-item Correlations for Attitude
Questions on Coal Development, Hardin

	ATT 1	ATT 2	ATT 3	ATT 4	ATT 5	ATT 6	ATT 7
ATT 1	1.00						
ATT 2	0.32 ^a	1.00					
ATT 3	0.82 ^a	0.32 ^a	1.00				
ATT 4	-0.13	-0.05	-0.24 ^a	1.00			
ATT 5	0.39 ^a	0.27 ^a	0.47 ^a	0.01	1.00		
ATT 6	0.49 ^a	0.27 ^a	0.57 ^a	-0.15	0.42 ^a	1.00	
ATT 7	0.69 ^a	0.35 ^a	0.70 ^a	-0.11	0.56 ^a	0.53	1.00

Source: Mountain West Research-North, Inc., 1983.

Note: ATT 1 through ATT 7 correspond with questions 1 through 7 on Table 15.

^aSignificant at 0.05 level or beyond.

Discussion:

See discussion following Table 16.

TABLE 18

Community Conflict/Cohesion
Sheridan and Hardin Area

Question	Strongly Agree	2	3	Neutral (percent)	5	6	Strongly Disagree	Mean Score ^a	Percent Agree	Number Responding
1. I think that labor unions have been good for this area										
Sheridan Area	17.3	6.9	9.8	22.3	9.2	11.0	23.4	4.3	34.0	346
Hardin Area	16.9	5.6	12.7	32.4	8.5	7.0	16.9	4.0	35.2	71
2. Coal development has brought long-time residents of this area much closer together.										
Sheridan Area	7.7	6.0	11.7	36.2	11.1	14.0	13.4	4.3	25.4	351
Hardin Area	9.6	9.6	6.8	43.8	12.3	4.1	13.7	4.1	26.0	73
3. Newcomers have been readily accepted into this community.										
Sheridan Area	14.6	19.1	21.3	18.0	14.3	5.6	7.0	3.4	55.0	356
Hardin Area	29.3	25.3	12.0	16.0	8.0	4.0	5.3	2.8	66.6	75

Source: Mountain West Research-North, Inc., 1983.

^aA mean score of 4.0 is neutral. Scores below 4.0 indicate agreement. Scores above 4.0 indicate disagreement.

Discussion:

Table 18 presents data for several statements concerning the effects of coal development on community relationships. Coal development has been one of the principal factors in the increased importance of unions in the local area and in the influx of newcomers to the area.

Respondents in the Sheridan area were likely to express strong opinions about the effects of unions: 17.3 percent strongly agreed that unions were good for the area while 23.4 percent strongly disagreed with this statement. A relatively high proportion of respondents (22.3 percent) were neutral. The mean score on this item for Sheridan area respondents was 4.3 (very slight disagreement) with about one-third (34.0 percent) of the sample agreeing¹ and 43.6 percent disagreeing¹ with the statement (unions have been good).

Respondents in the Hardin area tended to express somewhat less strong opinions regarding labor unions: 16.9 percent strongly disagreed with the statement, and 32.4 percent, almost one-third, were neutral. The mean score for the Hardin area was 4.0 (neutral), with 35.2 percent agreeing, 32.4 percent neutral, and 32.4 percent disagreeing.

Table 18 also shows the responses to the statement that coal mining had brought longtime residents closer together. About one-quarter of the respondents (25.4 percent in Sheridan and 26.0 percent in Hardin) agreed with this statement, a large proportion (36.2 percent in Sheridan and 43.8 percent in Hardin) were neutral, and a large proportion (38.5 percent in Sheridan and 30.1 percent in Hardin) expressed disagreement. The mean scores were 4.3 for Sheridan and 4.1 for Hardin (very slightly disagree). In Sheridan, 27.4 percent of the respondents disagreed or strongly disagreed, compared to 17.7 percent in Hardin. This may reflect the greater extent of coal development in the Sheridan area or the relatively more close-knit nature of the traditional Sheridan community, or both.

Respondents in both Sheridan and Hardin were less inclined to be neutral regarding the statement that newcomers had been really accepted into the community (question 3): 18.0 percent of Sheridan area and 16.0 percent of Hardin area respondents answered "neutral." A slight majority in Sheridan (55.0 percent) and a larger majority in Hardin (66.6 percent) agreed with the statement. In Hardin, 29.3 percent said they strongly agreed that newcomers had been readily accepted in the community, twice the percentage in Sheridan who gave this response (14.6 percent). The mean scores for this item (Sheridan, 3.4; Hardin, 2.8) reflect the stronger agreement among Hardin residents.

¹Includes all three agree or disagree categories.

TABLE 19

Community Relationships
Sheridan and Hardin Area

Question	Strongly Agree	2	3	Neutral (percent)	5	6	Strongly Disagree	Mean Score ^a	Percent Agree	Number Responding
1. Getting together with neighbors is as important in this community now as it was 10 years ago.										
Sheridan Area	25.2	13.3	13.0	19.5	13.0	9.1	6.8	3.4	51.5	353
Hardin Area	37.5	20.8	6.9	16.7	11.1	2.8	4.2	2.7	65.2	72
2. Families support local community activities and organizations as much now as they did 10 years ago.										
Sheridan Area	22.7	19.0	13.1	17.3	10.2	10.2	7.4	3.3	54.8	352
Hardin Area	15.3	27.8	13.9	25.0	8.3	2.8	6.9	3.2	57.0	72
3. People who live around here are more helpful than people are in most places.										
Sheridan Area	30.3	21.6	17.3	20.5	4.6	4.0	1.7	2.7	69.2	347
Hardin Area	22.8	12.3	16.4	28.8	9.6	1.4	2.7	2.9	51.5	73
4. The various interest groups in this community work together for the betterment of the whole community.										
Sheridan Area	17.1	21.7	21.4	21.4	7.1	5.7	5.7	3.2	60.2	351
Hardin Area	24.7	16.4	13.7	26.0	8.2	5.5	5.5	3.2	54.6	73

Source: Mountain West Research-North, Inc., 1983.

^a A mean score of 4.0 is neutral. Scores below 4.0 indicate agreement. Scores above 4.0 indicate disagreement.

Discussion:

Table 19 shows the response patterns to a number of questions about community relationships. As shown in the responses to questions 1 and 2 on this table, a majority in both Sheridan and Hardin felt that getting together with neighbors was as important now as 10 years ago and that families support local community activities and organizations as much now as 10 years ago. (Mean scores on these questions were 3.4 and 3.3 for Sheridan and 2.7 and 3.2 for Hardin.)

In both areas, respondents tended to agree that people in the community were more helpful than in most places (69.2 percent in Sheridan and 51.5 percent in Hardin), giving mean scores on this item of 2.7 for Sheridan and 2.9 for Hardin. Few respondents indicated strong disagreement with these statements.

An important indicator of a community's ability to respond to problems is the ability and willingness of various interest groups to work together for the betterment of the community. Although a relatively high proportion of respondents in both Sheridan and Hardin gave neutral responses to question 3 (21.4 percent and 26.0 percent, respectively), a majority indicated agreement (60.2 percent in Sheridan and 54.8 percent in Hardin). The mean score in both Sheridan and Hardin was 3.2.

TABLE 20

Community Involvement and Local Control
Sheridan and Hardin Area

Question	Strongly Agree	2	3	Neutral (percent)	5	6	Strongly Disagree	Mean Score ^a	Percent Agree	Number Responding
1. I am interested in what goes on in this community. Sheridan Area	67.8	18.5	7.4	4.6	0.6	0.6	0.6	1.6	93.7	351
Hardin Area	61.6	25.0	4.1	4.1	2.7	1.4	0.0	1.6	90.7	73
2. I am satisfied with the influence I have on local government. Sheridan Area	13.2	12.1	15.2	31.0	10.3	5.7	12.7	3.8	40.5	348
Hardin Area	15.3	8.3	11.1	33.3	6.9	9.7	15.3	4.0	34.7	72
3. There is not a lot that residents of this community can do to influence decisions that affect them. Sheridan Area	10.7	12.4	14.4	18.1	12.4	18.1	13.8	4.2	37.5	354
Hardin Area	7.0	22.5	8.5	19.7	12.7	19.7	9.9	4.1	38.0	71
4. Many more of the important decisions that affect this community are being made outside the community now than 10 years ago. Sheridan Area	22.9	19.4	14.7	27.1	5.0	7.4	3.5	3.1	57.0	340
Hardin Area	31.4	14.3	15.7	34.3	2.9	0.0	7.9	3.1	61.4	70
5. There is little that people in this area can do to make sure that reclamation laws are followed. Sheridan Area	11.0	9.3	14.1	14.7	13.0	16.9	20.9	4.4	34.4	354
Hardin Area	15.3	12.5	9.7	23.6	9.7	11.1	18.1	4.1	37.5	72

Source: Mountain West Research-North, Inc., 1983.

^a A mean score of 4.0 is neutral. Scores below 4.0 indicate agreement. Scores above 4.0 indicate disagreement.

Discussion:

Table 20 presents responses to five questions concerning community involvement and local control. Respondents in both Sheridan and Hardin indicated strong interest in "what goes on in this community" (67.8 strongly agree in Sheridan; 61.6 percent strongly agree in Hardin). The mean scores (1.6 and 1.6) and percent agreement (93.7 in Sheridan and 90.7 in Hardin) to the statement "I am interested in what goes on in this community" were the strongest responses in this section of the questionnaire. To some extent, it is felt that this response pattern was influenced by a regional ethic toward community affiliation and support which made agreement a socially normative response. In Hardin, interest in community affairs may have been heightened by the local elections that had been held shortly before and which had raised some intense community issues.

In the Sheridan area, 71.5 percent of the respondents reported that they were satisfied or neutral about the influence they had on local government. This compares with 68.3 percent in Hardin, where respondents expressed less satisfaction. In Sheridan, the mean score was a slightly positive 3.8 compared to a neutral 4.0 in Hardin.

Although 44.3 percent of Sheridan area and 42.3 percent of Hardin area respondents disagreed with the statement "There is not a lot that residents of this community can do to influence decisions that affect them" (mean score 4.2 and 4.1 for Sheridan and Hardin, respectively), only a few respondents in either area (15.9 percent in Sheridan and 10.8 percent in Hardin) disagreed with the statement that "many more of the important decisions that affect this community are being made outside the community now than 10 years ago."

Question 5 ("There is little that people in this area can do to make sure that reclamation laws are followed") responses followed a pattern similar to that shown in Question 3, though with somewhat stronger disagreement. The mean score for Sheridan on this question was 4.4, while that for Hardin was 4.1. This similarity in response is particularly interesting given the rather large differences in respondent's evaluation of the changes that have occurred in the natural environment over the past five years (see tables 22, 31, and 32).

TABLE 21

Inter-item Correlations for Community Involvement and Interest Items

	Item 1	Item 2	Item 3	Item 4	Item 5
<u>Sheridan</u>					
Item 1	1.00				
Item 2	0.15 ^a	1.00			
Item 3	-0.10 ^a	-0.12 ^a	1.00		
Item 4	0.04 ^a	-0.07	0.17 ^a	1.00	
Item 5	-0.13 ^a	-0.11 ^a	0.40 ^a	0.19 ^a	1.00
<u>Hardin</u>					
Item 1	1.00				
Item 2	-0.06 ^a	1.00			
Item 3	0.06	0.15	1.00		
Item 4	0.16	0.13	0.22	1.00	
Item 5	-0.07	0.09	0.46 ^a	0.14	1.00

Source: Mountain West Research-North, Inc., 1983.

Note: See Table 20 for the wording of the statements and the response patterns.

^aSignificant at the 0.05 level or below.Discussion:

As shown in Table 21, in Sheridan eight of the ten correlations between the community involvement and local control items are significant at the 0.05 level. However, only the correlation between items 3 and 5 is of any magnitude. This correlation indicates that residents who feel that they can influence the decisions that affect them are also inclined to feel that local residents can help ensure the enforcement of reclamation laws. In Hardin, the pattern is generally similar though the significance drops and there are some shifts in sign. In large part, this decreased significance is attributable to the small sample size for the Hardin area.

TABLE 22

The Three Most Important Changes Due to Coal Development
Five Most Frequent Responses by Order of Choice

Question: In your opinion, what are the three most important changes that have occurred in this area as a result of coal mining?				
	Sheridan Area	Percent	Hardin Area	Percent
Mentioned First	More and better jobs Population increases Higher cost of living Increase in business Better wages	20.6 15.3 12.2 11.4 6.1 (N=316)	Improved facilities More and better jobs Population increases Other changes Increase in business	26.3 11.8 10.5 10.5 6.6 (N=57)
Mentioned Second	Population increases Increase in business Other changes Higher cost of living Improved facilities	11.7 11.1 10.0 8.9 6.9 (N=290)	Improved facilities More and better jobs Increase in business Other changes Higher cost of living Higher crime	18.4 10.5 9.2 7.9 5.3 5.3 (N=55)
Mentioned Third	Other changes Increase in business Higher cost of living Improved facilities Overcrowded facilities	11.7 8.9 8.9 8.6 6.9 (N=254)	Improved facilities Increase in business Other changes More and better jobs Population increases	17.1 10.5 10.5 5.3 3.9 (N=40)

Source: Mountain West Research-North, Inc., 1983.

Note: N = number responding.

Discussion:

Table 22 shows the changes most frequently identified as (1) among the three most important and (2) caused by coal mining. In the Sheridan area, the expansion of employment opportunities and increased population were consistently identified as among the three most important changes. In the Hardin area, well over 60 percent of the respondents listed improved facilities as one of the three most important changes, reflecting the improved tax base and coal-based grants that the county and communities have received.

Respondents in the Sheridan area were likely to identify the higher cost of living as one of the most important changes due to coal mining. Despite this perception, an analysis of inflation and changes in the cost of living in Sheridan County found little evidence of mining effects on the cost of living aside from the housing market (Meale 1983).

TABLE 23

Evaluation of Community as a Place to Live Past and Future
Sheridan and Hardin Area

Question	Strongly Agree	2	3	Neutral (percent)	5	6	Strongly Disagree	Mean Score ^a	Percent Agree	Number Responding
1. On the whole, I think coal development has been a benefit to the local area. Sheridan Area	38.7	24.9	16.0	6.0	3.4	4.6	6.3	2.3	79.6	349
Hardin Area	48.6	18.9	14.9	10.8	2.7	1.4	2.7	2.1	82.4	74
2. My community is a much better place to live now than it was 5 years ago. Sheridan Area	9.7	12.9	13.4	26.0	11.7	10.6	15.7	4.1	36.0	350
Hardin Area	13.5	10.8	17.6	34.2	1.4	8.1	9.5	3.5	41.9	74
3. My community will be a much better place to live in 5 years than it is now. Sheridan County	8.7	13.3	11.3	38.0	9.3	8.7	10.7	3.9	33.3	345
Hardin	9.7	12.5	11.1	48.6	4.2	2.8	11.1	3.8	33.3	72

Source: Mountain West Research-North, Inc., 1983.

^a A mean score of 4.0 is neutral. Scores below 4.0 indicate agreement. Scores above 4.0 indicate disagreement.

Discussion:

On the whole, as shown in Table 23, respondents in both the Sheridan and Hardin areas felt that coal development had been a benefit to the local area (79.6 percent in Sheridan and 82.4 percent in Hardin). Despite this, just over one-third (36.0 percent) of the Sheridan area respondents and two-fifths (41.9 percent) of the Hardin area respondents felt that their community was a better place at the time of the survey than it had been five years previously. A large proportion (26.0 percent in Sheridan and 34.2 percent in Hardin) were neutral. The mean score for this item was 4.1 (neutral) in Sheridan and 3.5 (slightly positive) in Hardin. A substantial proportion of Sheridan area respondents (15.7 percent) indicated strong disagreement with the statement.

Respondents were less certain (or felt less strongly) about the changes that would occur in their community as a place to live over the next five years: 38.0 percent of Sheridan area respondents and 48.6 percent of Hardin area respondents indicated "neutral." It is not clear to what extent this response reflected uncertainty that further coal development would actually occur in the next five years and to what extent it reflected uncertainty or neutrality about the effects of additional coal development. One-third of the respondents in both areas felt that their community would become a better place in which to live.

The data in Table 23 certainly do not indicate that most residents felt a strong "boom town" effect during the period of rapid mining expansion.

TABLE 24

Evaluation of Change in Community over Last Five Years
by Length of Residence
Sheridan Area

My community is a much better place to live now than it was ten years ago.	Years of Residence					Row Total
	Less than 2	2-5	6-10	11-20	Over 20	
Agree (1, 2, 3)	0	16	26	19	63	124
	0.0	12.9	21.0	15.3	50.8	36.1
	0.0	28.1	54.2	43.0	33.7	
Neutral (4)	8	28	9	8	37	90
	8.9	31.1	10.0	8.9	41.1	26.2
	100.0	49.1	18.8	18.2	19.8	
Disagree (5, 6, 7)	0	13	13	17	37	130
	0.0	10.0	10.0	13.1	66.9	37.8
	0.0	22.8	27.0	38.6	46.5	
Column Total	8	57	48	44	187	344
	2.3	16.6	14.0	12.8	54.4	100.0

Source: Mountain West Research-North, Inc., 1983.

Note: First number in cell is count, second is row percent, third is column percent.

TABLE 25

Evaluation of Change in Community over Last Five Years
by Length of Residence
Hardin Area

My community is a much better place to live now than it was five years ago.	Years of Residence					Row Total
	Less than 2	2-5	6-10	11-20	Over 20	
Agree (1, 2, 3)	1 0.3 50.0	3 9.7 23.1	3 9.7 33.3	5 16.1 71.4	19 61.3 47.5	31 43.7
Neutral (4)	1 3.6 50.0	8 28.6 61.5	6 21.4 66.7	1 3.6 14.3	12 42.9 30.0	28 39.4
Disagree (5, 6, 7)	0 0.0 0.0	2 16.7 15.4	0 0.0 0.0	1 8.3 14.3	9 75.0 22.5	12 16.9
Column Total	2 2.8	13 18.3	9 12.7	7 9.9	40 56.3	71 100.0

Source: Mountain West Research-North, Inc., 1983.

Note: First number in cell is count, second is row percent, third is column percent.

TABLE 26

Evaluation of Community as a Place to Live in Five Years
by Length of Residence
Sheridan Area

My community is a much better place to live now than it was five years ago.	Years of Residence					Row Total
	Less than 2	2-5	6-10	11-20	Over 20	
Agree (1, 2, 3)	4	24	24	11	52	114
	3.5	21.0	21.0	9.6	45.6	33.6
	44.4	40.0	49.0	26.2	29.0	
Neutral (4)	3	28	18	19	60	128
	2.3	21.9	14.1	14.8	46.9	37.8
	33.3	46.7	36.7	45.2	33.5	
Disagree (5, 6, 7)	2	8	7	12	67	96
	2.1	8.3	7.3	12.5	69.8	28.3
	22.2	13.3	14.3	28.6	37.4	
Column	9	60	49	42	179	339
Total	2.7	17.7	14.5	12.4	52.8	100.0

Source: Mountain West Research-North, Inc., 1983.

Note: First number in cell is count, second is row percent, third is column percent.

TABLE 27

Evaluation of Community as a Place to Live in Five Years
by Length of Residence
Hardin Area

My community is a much better place to live now than it was five years ago.	Years of Residence					Row Total
	Less than 2	2-5	6-10	11-20	Over 20	
Agree (1, 2, 3)	1 4.2 50.0	6 25.0 46.2	2 8.3 22.2	3 12.5 42.9	12 50.0 31.6	24 34.8
Neutral (4)	1 3.1 50.0	5 15.6 38.5	5 15.6 55.6	3 9.4 42.9	18 56.3 47.4	32 46.4
Disagree (5, 6, 7)	0 0.0 0.0	2 15.4 15.4	2 15.4 22.2	1 7.7 14.3	8 61.5 21.0	13 18.8
Column Total	2 2.9	13 18.8	9 13.0	7 10.1	38 55.1	69 100.0

Source: Mountain West Research-North, Inc., 1983.

Note: First number in cell is count, second is row percent, third is column percent.

Discussion:

Tables 24 through 27 present respondents' evaluations of their community as a place in which to live according to their length of residence in the community. As seen in Table 24, Sheridan area respondents of all residential duration were relatively likely to respond "neutral" to the question comparing the community now to five years ago. Mid-term residents (6 to 20 years) were those most likely to agree that the community had improved as a place in which to live (54.2 and 43.0 percent). Longtime residents (over 20 years) were those most likely to disagree (46.5 percent). It is informative, however, that 18.8 percent of those with 6 to 10 years of residence, 18.2 percent of those with 11 to 20 years of residence and 19.8 percent of those with over 20 years of residence responded "neutral" to this question. The data for Hardin, shown in Table 25, indicate a higher degree of agreement by longtime residents (that the community is better now than five years ago), but given the small expected cell size, these results must be viewed with caution.

Tables 26 and 27 provide some insight on residents expectations for the future. In the Sheridan area, short to mid-term residents (up to 10 years) were generally more positive than mid- to long-term residents. Again, however, the high proportion of "neutral" responses indicates that there is no clear consensus among any category of residential duration that the community is improving or disintegrating.¹

¹This is very different from the responses given by Colstrip residents in 1979 to the same question. The Colstrip residents clearly saw the community improving -- both from five years previously and for five years hence (Mountain West Research, Inc. 1980).

Discussion:

As shown in Table 28, few respondents in either the Sheridan or Hardin areas indicated dissatisfaction with their life as a whole (4.8 percent in the Sheridan area and 1.4 percent in Hardin), and relatively few (8.0 percent in Sheridan, 15.1 percent in Hardin) gave neutral responses. The mean score of 1.9 for both areas indicated high overall agreement with the statement "Overall, I am satisfied with my life as a whole." Despite this, and an even more strongly positive response to the statement "I am interested in what goes on in this community" (Question 1), a relatively high proportion of Hardin area respondents did not indicate reluctance to move away from the community (28.8 percent were neutral and 13.7 percent disagreed). In contrast, Sheridan area respondents indicated a substantially greater commitment to continued residence in their community -- 83.9 percent said they would not want to move away from the community (a high 63.6 percent strongly agreed).

These data would seem to indicate that a large majority of Sheridan area residents do not feel that the coal development activities that have occurred or which might occur make the community an undesirable place in which to live. Hardin area respondents, despite more positive evaluations of change in the community over the past five years and more positive exceptions of future change, were surprisingly willing to move elsewhere -- indicating less commitment to, and satisfaction with, their community than was found among Sheridan area residents.

4. CHANGES IN COMMUNITY CHARACTERISTICS

This chapter presents the data obtained from a series of questions concerning change in the community over the past five years. For a series of items, respondents were asked to indicate whether they felt each had improved, remained unchanged, or worsened. Respondents were given the alternative of answering "don't know" for each of the items. This section of the questionnaire focused primarily on community facilities/services and on social problems.

TABLE 29

Evaluation of Change in Community
Facilities and Services
Sheridan Area
(percent)

Community Facility/Service	Evaluation				Total	Number Responding
	Improved	No Change	Worsened	Don't Know		
Public Schools	53.0	15.4	19.4	12.2	100.0	345
Roads	53.6	22.6	20.9	2.9	100.0	345
Local Government	23.7	53.8	14.0	8.5	100.0	342
Health Care	53.9	28.9	9.6	7.6	100.0	343
Social Services	39.9	34.0	9.8	16.3	100.0	338
Indoor Recreation Facilities	63.8	24.4	4.4	7.4	100.0	340
Outdoor Recreation Facilities	55.4	28.2	10.6	5.9	100.0	341
Churches	31.9	47.7	3.8	16.7	100.0	342
Law Enforcement	36.7	33.4	19.9	10.0	100.0	341
Shopping Opportunities	71.5	18.0	6.7	3.8	100.0	344
Public Utilities	20.2	28.7	44.4	6.7	100.0	342

• Source: Mountain West Research-North, Inc., 1983.

Discussion:

As shown in Table 29, all of the facilities/services included in the questionnaire were considered by a substantial majority of Sheridan area residents to have either improved or remained unchanged over the last five years. The facilities/services most frequently considered to have worsened were public utilities (44.4 percent), roads (20.9 percent), law enforcement (19.9 percent), and public schools (19.4 percent). Roads and public schools were felt to have improved by over half of the respondents (53.6 and 53.0 percent, respectively) while about one-third (36.7 percent) of the respondents felt that law enforcement had improved. Only 20.2 percent said that public utilities had improved. This was the lowest of any item on the list. A large majority of the Sheridan area respondents (71.5 percent) felt that shopping opportunities had improved and that indoor recreation facilities were better now than five years previously (63.8 percent). A majority felt that local government had not changed (53.8 percent). A relatively high proportion of respondents indicated lack of knowledge about changes in churches (16.7 percent) and social services (16.3 percent).

TABLE 30
Evaluation of Change in Community
Facilities and Services
Hardin Area
(percent)

Community Facility/Service	Evaluation				Total	Number Responding
	Improved	No Change	Worsened	Don't Know		
Public Schools	68.5	8.2	13.7	9.6	100.0	73
Roads	40.8	26.8	25.4	7.0	100.0	71
Local Government	22.5	43.7	25.4	8.5	100.0	71
Health Care	56.2	27.4	2.7	13.7	100.0	73
Social Services	43.1	34.7	4.2	18.1	100.0	72
Indoor Recreation Facilities	27.4	57.5	5.5	9.6	100.0	73
Outdoor Recreation Facilities	54.9	29.6	4.2	11.3	100.0	71
Churches	20.3	67.6	4.1	8.1	100.0	74
Law Enforcement	27.8	33.3	31.9	6.9	100.0	72
Shopping Opportunities	69.0	25.4	2.8	2.8	100.0	71
Public Utilities	17.8	41.1	32.9	8.2	100.0	73

Source: Mountain West Research-North, Inc., 1983.

Discussion:

As seen in Table 30, respondents in the Hardin area indicated improvement in their public schools, health care, outdoor recreation facilities and shopping opportunities during the last five years. Indoor recreation facilities churches, local government, and public utilities were frequently considered to have undergone no change. Law enforcement and public utilities were the items most frequently considered to have worsened. A relatively high proportion of respondents indicated lack of knowledge about changes in social services (18.1 percent) and health care (13.7 percent).

TABLE 31
Evaluation of Change in Social Problems and Environment
Sheridan Area
(percent)

Community Facility/Service	Evaluation				Total	Number Responding
	Improved	No Change	Worsened	Don't Know		
Natural Environment	15.0	33.3	42.8	8.8	100.0	339
Friendliness of the Community	9.6	45.2	39.7	5.5	100.0	345
Drug Abuse Problems	4.9	10.1	74.8	10.1	100.0	345
Alcohol Abuse Problems	4.1	14.7	72.7	8.5	100.0	341
Crime and Delinquency	5.2	11.4	77.3	6.1	100.0	343

Source: Mountain West Research-North, Inc., 1983.

Discussion:

In general, as seen in Table 31, respondents in the Sheridan area considered that the social and natural environment had either remained unchanged or gotten worse. The three social problems included on the list -- drug abuse, alcohol abuse, and crime and delinquency -- were each considered to have worsened by over 70 percent of the respondents. Few felt these problems had been reduced during the last five years.

A substantial proportion (39.7 percent) of respondents in the Sheridan area felt that the community had become less friendly during the last five years, although a somewhat larger number (45.2 percent) felt community friendliness had not changed. These responses are more negative than those concerning helpfulness of people in the community (Table 19) and the acceptance of newcomers into the community (Table 18).

TABLE 32

Evaluation of Change in Social Problems and Environment
Hardin Area
(percent)

Community Facility/Service	Evaluation				Total	Number Responding
	Improved	No Change	Worsened	Don't Know		
Natural Environment	12.7	52.1	15.5	19.7	100.0	71
Friendliness of the Community	9.9	74.6	8.5	7.0	100.0	71
Drug Abuse Problems	4.1	11.0	72.6	12.3	100.0	73
Alcohol Abuse Problems	5.5	17.8	67.1	9.6	100.0	73
Crime and Delinquency	2.8	11.3	74.6	11.3	100.0	71

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 32 shows the evaluation pattern of Hardin area respondents to the items concerning social problems and the social and natural environment of the community. Fewer Hardin than Sheridan area respondents (see Table 31) felt that the natural environment in their area had changed during the last five years (52.1 percent in Hardin said no change compared to 33.3 percent in Sheridan). The proportion of "don't know" responses in Hardin (19.7 percent) also indicate that effects on the natural environment in the Hardin area have not been perceived to be large.

Most Hardin area respondents also indicated that they felt that the friendliness of the community was unchanged (74.6 percent), with only 8.5 percent saying they felt it had worsened and 9.9 percent saying that friendliness had improved.

Respondents in the Hardin area, as those in the Sheridan area, generally felt that the social problems of drug abuse, alcohol abuse, and crime and delinquency had gotten worse (72.6, 67.1, and 74.6 percent, respectively).



5. ACTIVITIES

This chapter presents the data obtained on respondents' leisure time and community activities. Where data are sufficient and the analysis is informative, these activities are analyzed according to the length of time respondents had lived in the community.

TABLE 33

Things Necessary for a Good Quality of Life
Five Most Frequent Responses by Order of Choice
(percent)

Question: In your opinion, what do you most need to have a good quality of life?	Sheridan Area	Percent	Hardin Area	Percent
Mentioned First	Good Jobs	15.6	Good Jobs	15.8
	Steady Income	8.9	Good Health	9.2
	Good Health	8.1	Friends and Relatives	7.9
	Basics - Food, Shelter, Transportation	7.5	Steady Income	6.6
	Friends and Relatives	6.4	Spouse and Family	6.6
Mentioned Second		(N=306)	Church - Religion	6.6
			Self-fulfillment	6.6
				(N=62)
	Basics - Food, Shelter, Transportation	10.6	Basics - Food, Shelter, Transportation	11.8
	Steady Income	9.2	Friends and Relatives	10.5
Mentioned Third	Friends and Relatives	8.3	Community and Neighborhood Facilities	9.2
	Good Job	7.2	Spouse and Family	9.2
	Environment	6.1	Good Job	6.6
		(N=297)		(N=62)
Mentioned Third	Steady Income	9.7	Friends and Relatives	14.5
	Good Job	7.8	Community and Neighborhood Facilities	9.2
	Other	7.5	Church Religion	7.9
	Recreation Opportunities	6.4	Other	7.9
	Spouse and Family	6.1	Steady Income	7.9
	Friends and Relatives	6.1		(N=61)
		(N=280)		

Source: Mountain West Research-North, Inc., 1983.

Note: N = number responding.

Discussion:

Table 33 presents the most frequent responses made to the open-ended question "In your opinion, what do you most need to have a good quality of life?" Respondents were asked to list their three most important choices. In both the Sheridan and Hardin areas, "good jobs" was mentioned first most frequently. In the Sheridan area, respondents appear to have placed somewhat greater importance on economic factors -- jobs, income, and "basics" -- than respondents in the Hardin area, perhaps because of the substantial layoffs that had occurred in the mining industry and the increased unemployment that the area was experiencing at the time of the survey. The emphasis placed on jobs and income represent a somewhat different orientation among the survey respondents than had been found in earlier studies on quality of life where respondents tended to emphasize self-satisfaction (Andrews and Withey 1976). Overall, however, despite this difference in priorities, the aspects of life mentioned most frequently by respondents in the Sheridan and Hardin areas are similar to those found in other studies. The relatively low frequencies for even the most prevalent responses (below 16 percent) illustrate the variability in definition of "quality of life" among residents of the area.

TABLE 34

Participation in Recreation Activities
Sheridan Area
(percent)

Recreation Activity	Percent of Respondents Who Participated					Total	Number Responding
	None	1 to 5 Times	6 to 10 Times	11 to 25 Times	26 times or more		
Hunting	49.9	20.8	12.3	12.5	4.6	100.0	(351)
Camping	43.7	22.1	17.2	12.6	4.3	100.0	(348)
Downhill Skiing	90.3	7.1	1.4	0.9	0.3	100.0	(352)
Cross Country Skiing	88.9	6.8	2.0	2.3	0.0	100.0	(351)
Hiking	54.6	24.3	10.1	6.9	4.0	100.0	(346)
Snowmobiling	81.2	9.4	3.1	4.0	2.3	100.0	(351)
Off-road Vehicles	61.2	18.1	8.3	6.9	5.5	100.0	(348)
Stream Fishing	39.2	27.7	13.0	14.4	5.8	100.0	(347)
Lake/Reservoir Fishing	53.0	26.9	9.5	6.6	4.0	100.0	(349)
Motorized Boating	78.6	15.1	2.9	2.6	0.9	100.0	(350)
Nonmotorized Boating	88.3	8.8	1.1	1.1	0.6	100.0	(351)
Backpacking on Foot	82.8	12.3	3.4	1.1	0.3	100.0	(349)
Backpacking on Horse	90.9	3.7	3.1	2.3	0.0	100.0	(351)
Soccer	97.4	0.6	0.6	0.6	0.9	100.0	(352)
Baseball/Softball	85.7	4.9	2.6	1.4	5.4	100.0	(350)
Football	92.6	4.3	1.7	0.3	1.1	100.0	(351)
Other Outdoor Recreation	74.6	9.0	4.0	5.3	7.1	100.0	(323)
Basketball	89.2	5.4	2.0	1.4	2.0	100.0	(351)
Golf	88.3	4.6	1.4	3.7	2.0	100.0	(351)
Tennis	92.3	3.7	1.7	1.4	0.9	100.0	(352)
Handball/Racquetball	88.1	2.6	3.1	2.8	3.4	100.0	(352)
Other Indoor Recreation	78.2	2.4	2.1	4.8	12.4	100.0	(331)

Source: Mountain West Research-North, Inc., 1983.

TABLE 35

Participation in Recreation Activities
Hardin Area
(percent)

Recreation Activity	Percent of Respondents Who Participated					Total	Number Responding
	1 to 5 Times	6 to 10 Times	11 to 25 Times	26 times or more			
Hunting	57.5	17.8	9.6	9.6	5.5	100.0	(73)
Camping	57.5	20.5	16.4	2.7	2.7	100.0	(73)
Downhill Skiing	89.0	5.5	2.7	2.7	0.0	100.0	(73)
Cross Country Skiing	94.5	5.5	0.0	0.0	0.0	100.0	(73)
Hiking	61.6	26.0	5.5	1.4	5.5	100.0	(73)
Snowmobiling	83.6	9.6	0.0	4.1	2.7	100.0	(73)
Off-road vehicles	61.1	18.1	11.1	5.6	4.2	100.0	(72)
Stream fishing	52.8	27.8	11.1	2.8	5.6	100.0	(72)
Lake/Reservoir fishing	60.3	30.1	6.8	1.4	1.4	100.0	(73)
Motorized boating	59.7	31.9	8.3	0.0	0.0	100.0	(72)
Nonmotorized boating	79.5	19.2	1.4	0.0	0.0	100.0	(73)
Backpacking on foot	83.6	13.7	2.7	0.0	0.0	100.0	(73)
Backpacking on horse	94.5	2.7	0.0	1.4	1.4	100.0	(73)
Soccer	97.3	2.7	0.0	0.0	0.0	100.0	(73)
Baseball/Softball	79.5	9.6	1.4	1.4	8.2	100.0	(73)
Football	91.8	5.5	2.7	0.0	0.0	100.0	(73)
Other Outdoor Recreation	72.5	10.1	5.8	1.4	10.1	100.0	(69)
Basketball	87.7	4.1	4.1	4.1	0.0	100.0	(73)
Golf	88.9	5.6	2.8	0.0	2.8	100.0	(72)
Tennis	86.3	5.5	2.7	1.4	4.1	100.0	(73)
Handball/Racquetball	94.5	5.5	0.0	0.0	0.0	100.0	(73)
Other Indoor Recreation	78.6	4.3	4.3	4.3	8.6	100.0	(70)

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Tables 34 and 35 show the pattern of responses to the question "Approximately how many days in the past year did you participate in the following activities?"

In the Sheridan area, respondents participated most frequently in outdoor recreation activities: (1) stream fishing (60.8 percent), (2) camping (56.3 percent), (3) hunting (50.1 percent), (4) lake/reservoir fishing (47.0 percent), and (5) hiking (45.4 percent). Participation in organized or team sports (soccer, baseball/softball, football, basketball, golf, tennis, and handball/racquetball) was generally low (fewer than 15 percent). This pattern indicates a high degree of utilization of the outdoor recreation opportunities of the region and illustrates the effect that increased population would have on demand for hunting, fishing, and camping/hiking areas.

In the Hardin area, a similar pattern of recreation is indicated, though with a somewhat lower proportion of participants in the most popular activities. Stream fishing (47.2 percent), hunting (42.5 percent), camping (42.5 percent), motorized boating (40.3 percent), and lake/reservoir fishing (60.3 percent) were the five activities that drew the greatest proportion of participants.

Off-road vehicles (38.8 percent in Sheridan and 38.9 percent in Hardin) and snowmobiling (18.8 percent in Sheridan and 16.4 percent in Hardin) indicate a substantial degree of participation in recreation activities that have been identified as potentially controversial in the region.

In response to the question concerning the Cloud Peak Primitive Area of the Big Horn Mountains, 35.1 percent of Sheridan area and 11.9 percent of Hardin area respondents indicated that they or members of their household had visited the backcountry of this area during the past year. These data correspond with both the greater proximity of Sheridan area residents to Cloud Peak and to the higher participation rates in hiking for Sheridan area respondents.

TABLE 36
Participation in Community Activities
(percent)

<u>Question:</u> How often are you involved in community activities?	Sheridan Area	Hardin Area
Often	20.7	20.0
Sometimes	39.2	37.3
Seldom	28.3	30.7
Never	11.8	12.0
TOTAL	100.0	100.0
NUMBER	357	75

Source: Mountain West Research-North, Inc., 1983.

Discussion:

As seen in Table 36, responses concerning frequency of participation in community activities were very similar for the Sheridan and Hardin area samples. Nearly 60 percent of respondents in both areas said that they were "often" or "sometimes" involved in community activities.

For the Sheridan area, crosstabulation of this question with interest in the community (Question 9 on the questionnaire) yielded correlations all in the expected direction (table not shown). Crosstabulations with length of residence in the community did not show a clear relationship between length of residence and participation in community activities (table not shown).



6. SOCIAL RELATIONSHIPS

This chapter presents the survey data on friendship and interaction patterns. These data are presented last because they are best interpreted in light of the previous data on respondent characteristics, attitudes, evaluation of change in the community, and activities.

TABLE 37
Friendship Patterns of Respondent
Sheridan and Hardin Area
(percent)

Question: Think of your three best friends. They may be relatives or nonrelatives, as you wish. How many of these friends:	None of Them	One of Them	Two of Them	All Three of Them	Total (Percent)	Number Responding
1. Live in the same neighborhood you do.						
Sheridan Area	41.6	27.9	16.5	14.0	100.0	351
Hardin Area	34.2	32.9	17.8	15.1	100.0	73
2. Live in same community you do (but not in the same neighborhood).						
Sheridan Area	11.6	11.9	21.2	55.2	100.0	344
Hardin Area	11.4	17.1	20.0	51.4	100.0	70
3. Are relatives.						
Sheridan Area	68.4	16.7	10.9	4.0	100.0	348
Hardin Area	56.9	25.0	16.7	1.4	100.0	72
4. Are co-workers.						
Sheridan Area	63.5	19.1	10.3	7.1	100.0	340
Hardin Area	69.6	20.3	4.3	5.8	100.0	69

Source: Mountain West Research-North, Inc., 1983.

TABLE 38

Friendship Patterns of Respondent's Spouse
Sheridan and Hardin Area

Question: Ask about your spouse or partner's three best friends; they may be relatives or nonrelatives. How many of these friends:	None of Them	One of Them	Two of Them	All Three of Them	Total (Percent)	Number Responding ^a
1. Live in the same neighborhood you do.						
Sheridan Area	48.0	29.5	13.0	9.4	100.0	254
Hardin Area	46.4	30.4	10.7	12.5	100.0	56
2. Live in the same community you do (but not in the same neighborhood).						
Sheridan Area	13.4	14.2	22.9	49.4	100.0	253
Hardin Area	10.7	17.9	25.0	46.4	100.0	56
3. Are relatives.						
Sheridan Area	67.3	16.5	9.8	6.3	100.0	254
Hardin Area	63.8	20.7	13.8	1.7	100.0	58
4. Are co-workers.						
Sheridan Area	70.8	17.8	7.9	3.6	100.0	253
Hardin Area	72.7	12.7	12.7	1.8	100.0	55

Source: Mountain West Research-North, Inc., 1983.

^a A total of 89 respondents in the Sheridan area and 16 respondents in the Hardin area had no spouse.

Discussion:

Along with employment and economic security, friends and relatives were consistently identified as important components of a desirable quality of life (see Table 33). Tables 37 and 38 show the response patterns for the Sheridan and Hardin samples concerning the characteristics and residential locations of their and their spouse's three best friends. As seen in these tables, there is considerable symmetry in the characteristics of the respondent's friends and the respondent's spouse's friends.¹

As the tables show, respondents in the Sheridan area were less likely (58.4 percent) than respondents of the Hardin area (65.8 percent) to have at least one of their three best friends live in their same neighborhood. This corresponds to the pattern found by others -- most of the person's best friends are not neighborhood-based (Wellman and Leighton 1978). However, respondents in both areas showed very similar patterns in terms of friends who lived in the community but not in their same neighborhood. Only slightly over 10 percent of the respondents did not have at least one of their best friends living in the community.

Friendship ties with relatives appeared to be somewhat more prevalent in Hardin than in Sheridan, while ties with co-workers were more pronounced in Sheridan than in Hardin.² In both communities, a high proportion of respondents indicated that none of their three best friends were co-workers (63.5 percent in Sheridan and 69.6 percent in Hardin).

Longer-term residents (over 10 years) in the Sheridan area were more likely to have some of their best friends (1) live in their neighborhood, (2) live in the community, and (3) be relatives than respondents of shorter duration. No clear pattern emerged from crosstabulation between the number of friends who were co-workers and length of residence.

¹Some caution must be used in interpreting the data on spouse's friends since it was provided by the respondent rather than by the spouse directly.

²Spouse's friends were less frequently co-workers, at least in part because spouses were more likely to be female. Females were less likely to be working than males.

TABLE 39
Visiting Patterns of Respondents
Sheridan and Hardin Area
(percent)

Question	Often	Sometimes	Rarely	Never	Total	Number Responding
1. How often do you get together to visit with people in your neighborhood.						
Sheridan Area	17.6	40.5	33.1	8.8	100.0	353
Hardin Area	27.6	30.3	31.6	10.5	100.0	76
2. How often do you get together to visit with other people in your community (but not in your neighborhood).						
Sheridan Area	29.9	49.7	18.2	2.2	100.0	358
Hardin Area	30.3	42.1	25.0	2.6	100.0	76

Source: Mountain West Research-North, Inc., 1983.

Discussion:

The pattern of visiting shown in Table 39 is consistent with the data on friendship patterns in tables 37 and 38. Respondents in both communities indicated a greater frequency of visiting with people in the community outside of their neighborhoods than with people in their neighborhoods. As with friendships, residents of Hardin were more likely to visit "often" with neighbors than were residents of Sheridan.

TABLE 40
Characteristics of Friends
(percent)

Question: Are most of your friends [in general] longtime (over 20 years) residents of this community?	Sheridan Area	Hardin Area
Yes	64.4	68.1
No	35.6	31.9
TOTAL	100.0	100.0
NUMBER	354	72

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 40 shows the proportion of respondents in the Sheridan and Hardin areas whose friends are mostly longtime residents. A majority of respondents in both areas (64.4 percent in Sheridan and 68.1 percent in Hardin) said that most of their friends were longtime residents. As shown in Table 41, residents were more likely to have friends who were longtime residents than were respondents who had lived in the area for a shorter time (table not shown).

TABLE 41

Characteristics of Friends by Length of Residence
 Sheridan Area
 (percent)

Question: How many years have you lived in this community?	Question: Are most of your friends [in general] longtime (over 20 years residents of this community?)		
	Yes	No	Row Total
Less than 2	1	8	9
	11.1	88.9	2.6
	0.4	6.5	
2-5 Years	12	48	60
	20.0	80.0	17.2
	5.3	38.7	
6-10 Years	22	28	50
	44.0	56.0	14.3
	9.8	22.6	
11-20 Years	32	14	46
	69.6	30.4	13.2
	14.2	11.3	
Over 20 Years	158	26	184
	85.9	14.1	52.7
	70.2	21.0	
Column Total	225	124	349
	64.5	35.5	100.0

Source: Mountain West Research-North, Inc., 1983.

TABLE 42
Contact with Coal Mining Employment
(percent)

Question	None	1-3	4-10	Number Responding
1. How many of [your and/or your spouse's] close relatives work for local companies				
Sheridan Area	69.1	27.8	3.1	353
Hardin Area	81.1	17.6	1.4	74
2. How many of [your and/or your spouse's] close relatives work in other local jobs connected directly to coal mining?				
Sheridan Area	85.5	13.3	1.2	346
Hardin Area	93.4	5.3	1.3	76

Source: Mountain West Research-North, Inc., 1983.

Discussion:

Table 42 presents data illustrating respondents' indirect ties to coal mining and its related employment. As expected, given the concentration of coal mining activities near the Sheridan area, respondents in Sheridan more frequently than those in Hardin had close relatives working for local coal companies (30.9 percent in Sheridan, 18.9 percent in Hardin) or in other local jobs connected directly to coal mining (14.5 percent in Sheridan, 6.6 percent in Hardin). Longtime residents in the Sheridan area were somewhat more likely than newcomers to have friends and relatives with coal-related jobs. (Table not shown.)

7. METHODOLOGY

Introduction

This chapter describes the methodology utilized in the area resident survey. The survey was conducted through the administration of a mail questionnaire to a randomly selected sample of residents in the Sheridan and Hardin areas.

Questionnaire Design

The questionnaire, or interview schedule, was designed by Mountain West Research-North, Inc. with input from the Montana Department of State Lands and the U.S. Office of Surface Mining. Several items were adapted from an interview schedule previously utilized in the Decker area by one of the team members, Dr. Patrick Jobes. The draft instrument was pretested on a small sample (6) of Billings area residents. Revisions were made based on this pretest, and the final version of the questionnaire was printed in booklet form. These items were utilized to provide longitudinal data for the Decker area in a companion study (see Jobes and Branch 1983). A copy of the questionnaire is shown in Figure 2.

Sampling

A sample size of 650 households was determined to be adequate for the purposes of the survey. Attention was focused on communities in the Sheridan area (Sheridan, Dayton, Ranchester, Story, and Decker) and Hardin. Because of other accompanying research efforts, the Crow Reservation was not included in the sampling universe. Although the Decker area was included, its small population yielded only two households that were included within the Sheridan area. Since it was of particular interest to the study team, it was made the focus of an additional, more intensive sampling effort. These additional households were analyzed separately and were not included in the data presented in this report.

The sample was selected from the 1982 Sheridan and Hardin telephone directories. Prior to drawing the sample, all businesses were removed from the list, as were multiple listings for the same name. All numbers in Crow Agency were removed from the Hardin listing by eliminating numbers containing the Crow Agency prefix. The Sheridan listing included Dayton, Story, Ranchester, and Decker. Households were selected by systematic random sampling; a sampling interval determined by the estimated sample size (650) and the total qualified listings was applied with a starting point determined with a random number table.

To eliminate bias resulting from the respondent's gender, half of the questionnaires requested that the male head of the household serve as the respondent while half requested that the female head of the household serve this function.

Survey Administration

A master list of the sample household was prepared and an identification number was assigned to each household. The identification number was placed on each questionnaire to enable the households to be removed from follow-up lists as completed questionnaires were returned.

The addresses listed in the telephone directory were made more specific by adding the appropriate route numbers as determined from local post offices. On November 20, 1982, each of the

FIGURE 2
Area Resident Survey

Your Community



And

Coal Development

This survey is being conducted to better understand how communities respond to coal development.

The male head of the household should complete this questionnaire. If there is no male head of the household, or he is unable to participate in this study, the female head of the household should complete it.

Please answer all of the questions. If you wish to comment on any question or qualify your answers, please feel free to use the space in the margins or add another sheet of paper. Your comments will be read and reported to decision makers.

Thank you for your help.

"Your Community and Coal Development"
is sponsored by the Montana Department of
State Lands.

Return this questionnaire to:
Mountain West Research - North, Inc.
512 North 29th Street
Billings, Montana 59101

FIGURE 2 (cont.)

Area Resident Survey

An important purpose of this study is to learn more about how people feel about coal development and their community. (Circle the number that best represents your opinion.)

		STRONGLY AGREE		NEUTRAL			STRONGLY DISAGREE	
		1	2	3	4	5	6	7
Q-1	I think additional coal mines should be developed in this area.	1	2	3	4	5	6	7
Q-2	I do not want to see any reduction in mining employment in this area.	1	2	3	4	5	6	7
Q-3	Expansion of coal development within this area would directly benefit the area's residents.	1	2	3	4	5	6	7
Q-4	If there are going to be additional coal mines in this area, the local government should control it rather than the state or federal government.	1	2	3	4	5	6	7
Q-5	With proper planning, I do not think an increase in population will negatively affect this area.	1	2	3	4	5	6	7
Q-6	The coal companies are doing their share to help solve the impact of coal mining on the community.	1	2	3	4	5	6	7
Q-7	On the whole, I think coal development has been a benefit to the local area.	1	2	3	4	5	6	7
Q-8	I think that labor unions have been good for this area.	1	2	3	4	5	6	7
Q-9	I am interested in what goes on in this community.	1	2	3	4	5	6	7
Q-10	I am satisfied with the influence I have on the local government.	1	2	3	4	5	6	7
Q-11	I would not want to move away from this community.	1	2	3	4	5	6	7
Q-12	Overall, I am satisfied with my life as a whole.	1	2	3	4	5	6	7
Q-13	People who live around here are more helpful than people are in most places.	1	2	3	4	5	6	7
Q-14	My community is a much better place to live now than it was 5 years ago.	1	2	3	4	5	6	7

FIGURE 2 (cont.)
Area Resident Survey

		STRONGLY AGREE		NEUTRAL		STRONGLY DISAGREE		
		1	2	3	4	5	6	7
Q-15	My community will be a much better place to live in 5 years than it is now.	1	2	3	4	5	6	7
Q-16	Many more of the important decisions that affect this community are being made outside the community now than 10 years ago.	1	2	3	4	5	6	7
Q-17	There is little that people in this area can do to make sure that reclamation laws are followed.	1	2	3	4	5	6	7
Q-18	Coal development has brought long-time residents of this area much closer together.	1	2	3	4	5	6	7
Q-19	Newcomers have been readily accepted into this community.	1	2	3	4	5	6	7
Q-20	There is not a lot that residents of this community can do to influence decisions that affect them.	1	2	3	4	5	6	7
Q-21	Getting together with neighbors is as important in this community now as it was 10 years ago.	1	2	3	4	5	6	7
Q-22	Families support local community activities and organizations as much now as they did 10 years ago.	1	2	3	4	5	6	7
Q-23	The various interest groups in this community work together for the betterment of the whole community.	1	2	3	4	5	6	7
Q-24	Coal development has brought changes to your area. In your opinion, what are the three most important changes that have occurred in this area as a result of coal mining.							
	1. _____							

	2. _____							

	3. _____							

FIGURE 2 (cont.)
Area Resident Survey

Q-25 Could you please tell us how you feel about the following parts of your community. Do you think that each has improved, had no change, or worsened during the past five years. (Circle your answer.)

	IMPROVED	NO CHANGE	WORSENE	DON'T KNOW
Public Schools	1	2	3	4
Roads	1	2	3	4
Local Government	1	2	3	4
Health Care	1	2	3	4
Social Services	1	2	3	4
Indoor Recreational Facilities	1	2	3	4
Outdoor Recreational Facilities	1	2	3	4
Churches	1	2	3	4
Law Enforcement	1	2	3	4
Natural Environment	1	2	3	4
Friendliness of the Community	1	2	3	4
Drug Abuse Problems	1	2	3	4
Alcohol Abuse Problems	1	2	3	4
Shopping Opportunities	1	2	3	4
Crime and Delinquency	1	2	3	4
Public Utilities	1	2	3	4

FIGURE 2 (cont.)
Area Resident Survey

Another part of understanding the communities people live in has to do with their friends and relatives. So, next we would like you to think of your three best friends, they may be relatives or non-relatives, as you wish. The next few questions are about these friends. (Circle your answers.)

YOUR FRIENDS

	ONE OF THEM	TWO OF THEM	ALL THREE OF THEM	NONE OF THEM
Q-26 How many of these friends live in the same neighborhood you do?	1	2	3	4
Q-27 How many of these friends live in the same community you do (but not in the same neighborhood)?	1	2	3	4
Q-28 How many of these friends are relatives?	1	2	3	4
Q-29 How many of these friends are co-workers?	1	2	3	4

Are you currently living with a spouse or equivalent partner?

YES

NO →

IF YOU ARE NOT SKIP
FROM HERE TO Q-34

Now we would like to ask about your spouse or partner's three best friends, they may be relatives, or non-relatives. The next four questions are about these friends. (Circle your answers.)

YOUR SPOUSE'S FRIENDS

	ONE OF THEM	TWO OF THEM	ALL THREE OF THEM	NONE OF THEM
Q-30 How many of these friends live in the same neighborhood you do?	1	2	3	4
Q-31 How many of these friends live in the same community you do (but not in the same neighborhood)?	1	2	3	4
Q-32 How many of these friends are relatives?	1	2	3	4
Q-33 How many of these friends are co-workers?	1	2	3	4

FIGURE 2 (cont.)
Area Resident Survey

Next, a few questions about your activities.

Q-34 How often do you get together to visit with people in your neighborhood? (Circle number of your answer.)

- 1 OFTEN
- 2 SOMETIMES
- 3 RARELY
- 4 NEVER

Q-35 How often do you get together to visit with other people in your community (but not in your neighborhood)?

- 1 OFTEN
- 2 SOMETIMES
- 3 RARELY
- 4 NEVER

Q-36 How often are you involved in community activities? (Circle number of your answer.)

- 1 OFTEN
- 2 SOMETIMES
- 3 RARELY
- 4 NEVER

Q-37 Thinking now of your and/or your spouse's close relatives, how many of them work for local coal companies? (If none, write "O".)

NUMBER _____

Q-38 How many of your and/or your spouse's close relatives work in other local jobs connected directly to coal mining? (If none, write "O".)

NUMBER _____

Q-39 Think now of your friends in general. Are most of your friends long-time (over 20 years) residents of this community? (Circle number of your answer.)

- 1 YES
- 2 NO

Q-40 Quality of life means different things to different people. In your opinion what do you most need to have a good quality of life? (List your three most important choices.)

1. _____
2. _____
3. _____

FIGURE 2 (cont.)
Area Resident Survey

An important part of a community has to do with how people spend their time when they are not working. Our next concern is about recreation.

Q-41 Approximately how many days in the past year did you participate in the following activities? (Write down the number of days beside each activity. If none, write "0".)

- ___ HUNTING
- ___ CAMPING
- ___ DOWNHILL SKIING
- ___ CROSS COUNTRY SKIING
- ___ HIKING
- ___ SNOWMOBILING
- ___ OFF-ROAD VEHICLE DRIVING
- ___ STREAM FISHING
- ___ LAKE/RESERVOIR FISHING
- ___ MOTORIZED BOATING
- ___ NONMOTORIZED BOATING
- ___ BACKPACKING ON FOOT
- ___ BACKPACKING ON HORSE
- ___ SOCCER
- ___ BASEBALL/SOFTBALL
- ___ FOOTBALL
- ___ OTHER OUTDOOR RECREATION

(Write down types)

- ___ BASKETBALL
- ___ GOLF
- ___ TENNIS
- ___ HANDBALL/RACQUETBALL
- ___ OTHER INDOOR RECREATION

(Write down types)

Q-42 In the past year have you or members of your household gone into the backcountry of the Cloud Peak Primitive Area in Wyoming's Big Horn Mountains? (Circle number of your answer.)

1 YES

2 NO

IF NO, SKIP TO Q-44

Q-43 In your opinion, was the area: (Circle number of your answer.)

1 TOO CROWDED

2 SOMEWHAT CROWDED

3 NOT CROWDED

FIGURE 2 (cont.)
Area Resident Survey

Finally, we would like to ask a few questions about yourself, and the other people in your household, to help interpret the results.

Q-44 What is your current age?

YEARS _____

Q-45 Are you: male or female? (Circle number of your answer.)

- 1 MALE
- 2 FEMALE

Q-46 What is your highest education level? (Circle number of your answer.)

- 1 LESS THAN HIGH SCHOOL GRADUATE
- 2 HIGH SCHOOL GRADUATE OR G.E.D.
- 3 SOME COLLEGE OR VOCATIONAL SCHOOL
- 4 COLLEGE GRADUATE OR HIGHER

Q-47 Are you: employed outside the home, or as a proprietor, farmer, or rancher; not currently employed; or retired? (Circle number of your answer.)

- 1 EMPLOYED OUTSIDE THE HOME, OR AS A PROPRIETOR, FARMER, OR RANCHER
- 2 NOT CURRENTLY EMPLOYED
- 3 RETIRED

Q-48 What is your main occupation? Please write down the type of work you do, not who you work for. (If you are retired, please write down the main occupation before you retired, then skip from here to Q-51.)

OCCUPATION _____

Q-49 Are you usually employed in any other work or as a farmer or rancher? (Circle number of your answer.)

- 1 YES → Q-50 What type of work is that?
- 2 NO OCCUPATION _____

FIGURE 2 (cont.)
Area Resident Survey

Q-51 What is your marital status? (Circle number of your answer.)

- 1 MARRIED OR THE EQUIVALENT
- 2 SINGLE
- 3 DIVORCED/SEPARATED
- 4 WIDOWED

1	2	3	4

Q-52 What is the current age of your spouse?

YEARS _____

Q-53 What is the highest education level of your spouse? (Circle number of your answer.)

- 1 LESS THAN HIGH SCHOOL GRADUATE
- 2 HIGH SCHOOL GRADUATE OR G.E.D.
- 3 SOME COLLEGE OR VOCATIONAL SCHOOL
- 4 COLLEGE GRADUATE OR HIGHER

Q-54 Is your spouse employed outside the home or as a proprietor, farmer, or rancher; not currently employed, or retired? (Circle number of your answer.)

- 1 EMPLOYED OUTSIDE THE HOME OR AS A PROPRIETOR, FARMER, OR RANCHER
- 2 NOT CURRENTLY EMPLOYED
- 3 RETIRED

Q-55 What is the main occupation of your spouse or living partner. Please write down the type of work this person does, not who they work for. (If your spouse or partner is retired, please write down the main occupation before retirement, then skip from here to Q-58.)

OCCUPATION _____

Q-56 Is your spouse or partner usually employed in any other work or as a farmer or rancher? (Circle number of your answer.)

- 1 YES → Q-57 What type of work is that?
- 2 NO OCCUPATION _____

Q-58 Of the people living in your household how many (including yourself) are there in each of the following age groups? (Write the number beside each age group, if there are no people in an age group, write "0".)

AGE	0- 5	_____
	6-10	_____
	11-14	_____
	15-18	_____
	19-25	_____
	26-30	_____
	31-65	_____
	OVER 65	_____

FIGURE 2 (cont.)
Area Resident Survey

Q-59 Which of the following best describes your household? (Read all of the choices before answering.) (Circle number of your answer.)

- 1 A COUPLE LIVING ALONE
- 2 A FAMILY (PARENTS) AND THEIR CHILDREN
- 3 A FAMILY PLUS OTHER RELATIVES
- 4 A FAMILY OR A COUPLE PLUS UNRELATED ADULTS
- 5 A SINGLE PERSON OR UNRELATED ADULTS
- 6 RELATED ADULT SINGLES
- 7 OTHER _____

PLEASE SPECIFY:

Q-60 Do you own or rent your housing? (Circle number of your answer.)

- 1 OWN
- 2 RENT

Q-61 How many years have you lived in this community?

YEARS _____

Q-62 Do you consider this to be your permanent residence? (Circle number of your answer.)

- 1 YES
- 2 NO → Q-63 Where do you consider your permanent home to be?

TOWN OR CITY

STATE

ZIP CODE

Q-64 Which range best represents the total income of your household in 1981 before taxes? (Circle number of your answer.)

- 1 LESS THAN \$10,000
- 2 \$10,001 to \$20,000
- 3 \$20,001 to \$30,000
- 4 \$30,001 to \$40,000
- 5 \$40,001 to \$50,000
- 6 \$50,001 to \$60,000
- 7 OVER \$60,000

FIGURE 2 (cont.)
Area Resident Survey

Is there anything else you would like to tell us about coal development and your community? Or about future changes you expect? If so, please use this space for that purpose

Your contribution to this effort is greatly appreciated. If you would like a copy of the environmental impact statements that will report results from this study, please print your name and address on the Environmental Impact Statement Form below. Cut it out and return it to the Montana Department of State Lands.

DO NOT WRITE YOUR NAME OR ADDRESS ON THIS QUESTIONNAIRE.

EIS REQUEST FORM

NAME_____

MAILING ADDRESS_____

CITY_____ STATE_____ ZIP CODE_____

MAIL TO:
Montana Department of State Lands
EIS Team
1539 Eleventh Avenue
Helena, Montana 59620

sample households was mailed a packet including a cover letter from the Montana Department of State Lands requesting their participation, a questionnaire, and a pre-addressed, stamped return envelop.

On November 26, a follow-up postcard was sent to all households, thanking those who had responded and reminding those who had not yet sent in their questionnaire to please do so. A second letter, including a duplicate questionnaire was sent out on December 26 to those who had not yet responded.

During this period, a substantial number of the original letters were returned by the post office as undeliverable. An effort was made to contact these households by telephone in order to obtain a correct, complete address and to encourage participation in the survey. A packet was then mailed to these households using the correct address. Households for which corrected addresses could not be obtained were eliminated from the sample base. In addition, a number of elderly or widowed householders returned the uncompleted questionnaire with notes indicating their lack of knowledge about coal mining or the death of the person to whom the packet had been addressed (because names were obtained from the telephone directory, the available names were primarily males). A brief letter assuring them of the importance of their response and describing the nature of the survey was sent to these persons, many of whom subsequently submitted completed questionnaires.

During the weeks of December 15 and December 30, a random sample of about 25 percent of the nonrespondents was called to remind them that their participation in the survey was still needed and that the deadline for participation had not passed. When the survey effort was completed, 439 usable questionnaires had been received, giving an overall response rate of 71 percent. Table 43 shows the response rates.

The 71 percent response rate obtained in the survey is excellent for a mail questionnaire, particularly considering that the survey effort took place over the Thanksgiving/Christmas/New Year holiday period and that coal mining activities in the region were undergoing a pronounced slump. Chapter 1 of this report presents the characteristics of the respondents and their households. These data indicate that males and homeowners were over-represented in the sample.

Data Preparation and Analysis

An experienced data analyst coded the questionnaires, basing the coding schemes for the open-ended questions on a random sample of questionnaires. For consistency, all questionnaires were coded by a single individual. Utilizing the data format prepared when the questionnaire was designed, the data were key-punched (and verified) onto cards which were read onto magnetic tape. The data were then analyzed using the Statistical Package for Social Sciences (SPSS).

As seen throughout the report, item nonresponse was generally low. The data were examined for inappropriate responses (key-punching errors) and for consistency. Based on these examinations and review of the questionnaires, the data appear to be of good quality and reliability.

Upon examination the response patterns of Hardin area and Sheridan area residents appeared to be quite different. Given the differences in degree of mining and in community characteristics between the Hardin and Sheridan areas, it was decided to analyze the data from these two areas separately. The sample size for the Sheridan area is quite large (360) and allows greater precision in estimating population characteristics and greater flexibility in the types of analyses that can be supported by the data than does the smaller sample size (76) for the Hardin area.

TABLE 43
Response Rate

	Sheridan Area	Hardin Area	Total
Original Sample			649
Adjusted Sample ^a			614
Returned			439
Usable	360	76	436
Return Rate			71.5
Usable Rate ^b			71.0

Source: Mountain West Research-North, Inc., 1983.

^aOriginal sample minus households with no identifiable local address. Based on the follow-up telephone calls, it is expected that the adjusted sample still includes households that had moved or were otherwise inappropriate for the survey (children's telephone listings, for example).

^bNumber of completed questionnaires with sufficient data to warrant inclusion in the analysis.

Statistical Validity

The sample size for Sheridan County was large enough that cross classifications with up to 24 degrees of freedom could detect small effects with a power of 0.95 at a level of significance of 0.05 (Cohen 1969). For Hardin, the sample size is not large enough to make inferences for such crosstabulations.

For both samples, the results were close to what was expected given the results of the field research. The two data sources complement each other. Checks of internal validity and analysis of the data indicate that the data presented in this report are of good quality. The strict quality control measures utilized to obtain a valid sample, code, and keypunch the data ensure accurate representation of residents' responses.

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